

**STORE  
BATTERIES  
FULLY CHARGED**



OPERATING AND MAINTENANCE MANUAL

## **TravelBELL™ XL2**

Military Configuration (Lubless hand pieces)

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Manufactured by

Bell Dental Products, LLC  
Denver, CO

For HELP e-mail to [customerservice@belldental.com](mailto:customerservice@belldental.com)

**800-920-4478**

## System Components



- |                          |                                 |
|--------------------------|---------------------------------|
| 1. CarryBELL™ Carry Case | 5. Contra Angle Hand Piece      |
| 2. Foot Switch (ON/OFF)  | 6. Motor                        |
| 3. PowerBELL™ Charger    | 7. SolarBELL™ (Wilderness only) |
| 4. Straight Hand Piece   | 8. BatteryBELL™ 30XL2           |

## Description

The TravelBELL™ XL system is a state-of-the-art product for performing dental procedures in the field where standard electricity is not available. The major components are listed above. Motor operation is controllable by either the control knob on the battery pack or an ON/OFF foot switch. The battery pack is rechargeable from either a 120 or 230 VAC 50 or 60 Hz

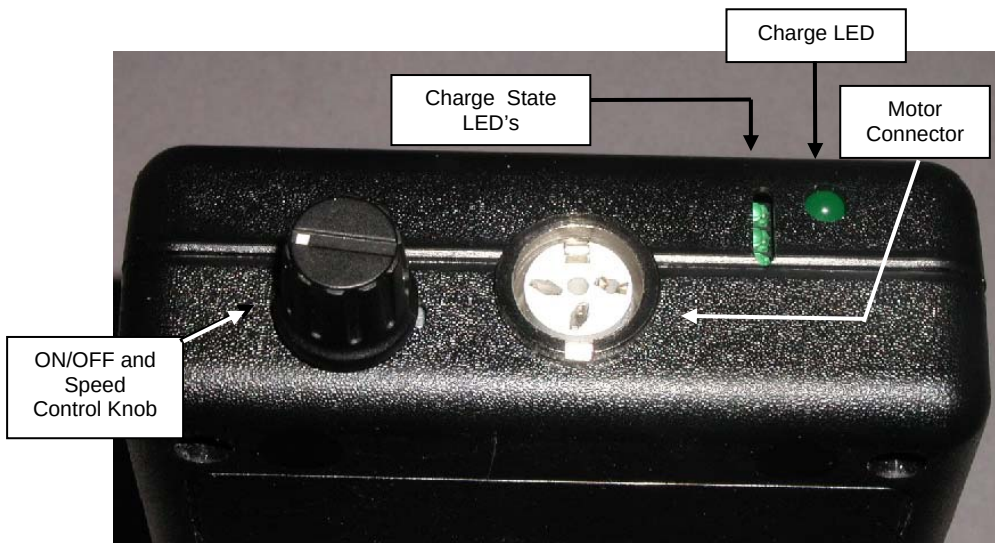
standard electrical outlet or the optional SolarBELL™ solar panels. The motor can be used for over 8 hours on a fully charged battery pack.

## Operation

- Verify that the battery is charged, by turning the battery ON and observing the charge state LEDs. At least two LEDs should be on. If only one is on, charge the pack before proceeding, see charging the battery pack instructions below;
- Verify that the ON/OFF Speed Control is in the "OFF" position, counterclockwise;
- If it is desired to use the foot switch, plug the foot switch into the back of the battery pack;
- Install the desired handpiece onto the motor;
- Install the desired instrument into the handpiece; and
- Turn the ON/OFF Speed Control "ON" by rotating the knob clockwise. Adjust the speed by turning the Speed Control knob clockwise to increase the speed and counter clockwise to decrease the speed. Adjust the speed to the desired level. If the foot switch is being used depress the foot switch while adjusting the motor speed.

NOTE: Battery pack will operate while charger is plugged into outlet.

NOTE: If the foot switch is being used it overrides the operational control of the Speed Control knob. The foot switch will control ON and OFF, the Speed Control will control the speed of the motor.



### Contra Angle Push Button Type Hand Piece

This hand piece will accept standard friction grip type burs. To install a bur firmly push on the release button on the top of the head of the hand piece and insert the bur. Release the button and the bur is held in place in the hand piece.

### Operational Cautions

Should the bur or file bind during operation:

- Stop Immediately
- DO NOT try to free the instrument by twisting or prying
- Slowly operate the motor and gently back the instrument straight out

NOTE: Twisting or prying the instrument can cause permanent damage to the handpiece and void the warranty.

### Bur/File Installation

#### Straight Type Handpiece

#### CAUTION

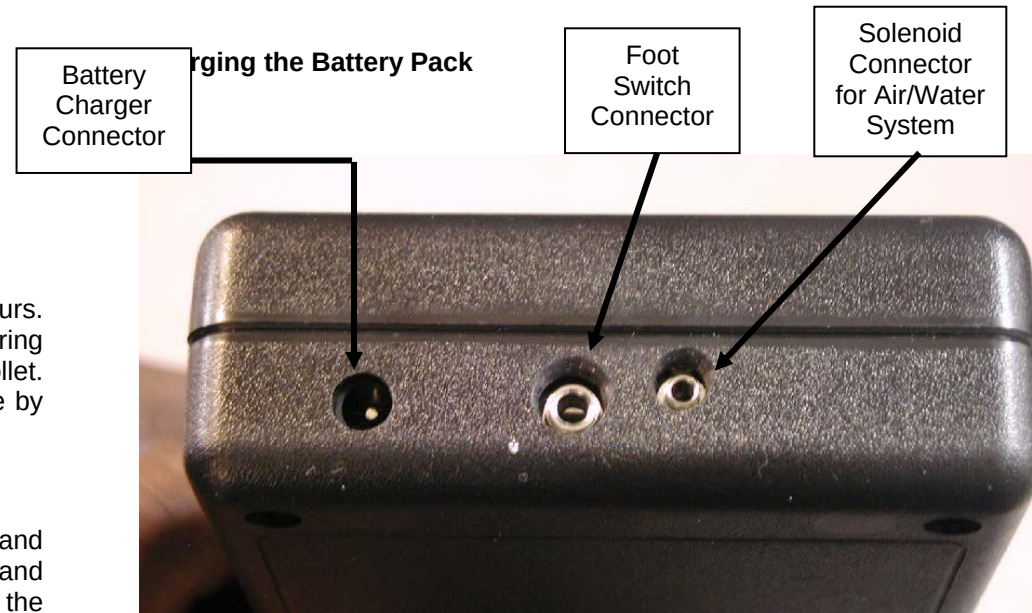
**Do not operate the handpiece without a bur locked in the collet. Motor damage may result.**

This handpiece will accept standard 3/32" (2.35mm) straight shank burs. To install a bur open the collet by turning the collet locking ring counterclockwise until it clicks into the detent. Insert the bur into the collet. Be sure the bur is fully inserted into the collet. Lock the bur into place by turning the collet locking ring clockwise until it clicks into the detent.

#### Contra Angle Latch Type Hand Piece

This handpiece will accept standard 3/32" (2.35mm) latch type burs and files. To install a bur or file, rotate the latch counterclockwise. Insert and rotate the bur or file. The rotation allows the bur or file to engage the spindle drive and seat into the proper position. Rotate the latch clockwise and gently pull on the instrument to insure that it is properly installed.

### Charging the Battery Pack



The battery pack contains NiMH batteries. They can be recharged more than 1000 times when properly maintained. They are designed to be quick charged in approximately 2 hours with the wall charger provided. They can also be charged with the optional SolarBELL™ panels in approximately 6 hours.

NOTE: Battery pack will operate while charger is plugged into outlet.

NOTE: The life of the battery pack will be extended if the battery pack is fully discharged before recharging.

- A. Connect the charger, or SolarBELL™, to the charger connector on the bottom of the battery pack;
- B. Plug the charger into the wall socket;
- C. The Charge LED should illuminate; and
- D. The Charge State LEDs should illuminate in sequence as the batteries charge.

The Charge LED indicates the following:

| <u>Charge LED</u> | <u>Meaning</u>                                                                      |
|-------------------|-------------------------------------------------------------------------------------|
| ON continuously   | The batteries are charging normally                                                 |
| Blinking          | - Performing Initial Trickle charge,<br>or<br>- Performing "Top-off" trickle charge |
| OFF continually   | - Battery Absent, or<br>- Charge complete, or<br>- Charger not connected            |

The Charge State LEDs indicate the following:

| <u>Charge State LED state</u>         | <u>Meaning</u>                                                                |
|---------------------------------------|-------------------------------------------------------------------------------|
| One LED is blinking                   | The batteries are charged to less than 20% capacity, stops motor              |
| One LED is illuminated continuously   | The batteries are charged to approximately 20% capacity                       |
| Two LEDs are illuminated continuously | The batteries are charged to approximately 60% capacity                       |
| 3 LEDs are illuminated continuously   | The batteries are charged to approximately 100% capacity                      |
| 3 LEDs are blinking                   | The batteries are in a final "Top-off" trickle charge, they are available for |

use

Note; the Charge State LEDs will also blink when the Charge LED blinks.

## NOTE

**Always store the battery pack FULLY CHARGED**

## *Equipment Care and Maintenance*

### **Sterilization of the Handpieces**

The handpieces can be sterilized by autoclave, alcohol vapor, or dry heat. Follow the manufacturers instructions for the sterilization equipment used.

The handpieces should be cleaned before sterilization. Flush all blood and fluids from the handpiece by putting the nose of the handpiece in a cup of water and operating until all of the fluids and debris have been flushed from the handpiece. Note, it may be necessary to replace the water during the cleaning operation.

NOTE: **DO NOT** use solvents when cleaning the handpieces.

## CAUTIONS

- DO NOT use "flash sterilization" techniques as they may shorten the useful life of the handpieces. Use of "flash sterilization" techniques will void the warranty.
- DO NOT exceed 365°F (180°C)
- DO NOT submerge the handpieces in any liquid, except as described in this manual.
- DO NOT use ultrasonic cleaners.
- DO NOT autoclave for extended periods of time (i.e. overnight) as damage to the gaskets and o-rings may result. Extended autoclaving will void the warranty.

NOTE: extended autoclaving should NOT be confused with repeated autoclaving. Repeated autoclaving will not harm the handpiece.

## Handpiece Maintenance

The handpieces require 2 maintenance actions, 1) cleaning, and 2) lubrication.

### Cleaning

The handpieces should be kept clean at all times.

#### CAUTIONS

- DO NOT use abrasive cleaner, harsh detergents, or chlorinated liquids (bleach)
- DO NOT use a stiff or wire brush
- DO NOT allow water to collect in the handpiece. Shake vigorously after the cleaning procedure is finished to remove all water;
- DO NOT submerge in any saline solution. Saline solution will corrode the handpiece.
- DO NOT use any ultrasonic cleaners.

NOTE: It is recommended to clean the handpiece immediately after completing a procedure. Allowing blood and fluids to dry on the handpiece will make cleaning more difficult.

- Remove the bur from the handpiece
- Flush all blood and fluids from the handpiece by putting the nose of the handpiece in a cup of water and operating until all of the blood and fluids have been flushed from the handpiece. Note, it may be necessary to replace the water during the cleaning operation;
- Remove the handpiece from the motor;
- Holding the forward part of the handpiece under running water, scrub gently with a soft brush and mild detergent. Be sure that all blood and debris are removed from the crevices of the locking ring on the handpiece;
- carefully rinse all detergent off of the handpiece and wipe it dry with a soft towel.

## Lubrication

#### NOTE

Only the High speed push button handpiece requires lubrication. The straight and latch type hand piece have permanently lubricated bearings

#### CAUTION

Use only BioLube Advanced Dental Handpiece E-Formula Lubricant to lubricate the high speed handpiece

### Latch Head Handpiece

The latch head handpiece does NOT require any lubrication, it employs permanently lubricated bearings.

### Push Button High Speed Handpiece

The push button handpiece should be lubricated before sterilization. Lubricate with BioLube Advanced Dental Handpiece E-Formula Lubricant. After lubricating, attach the handpiece to the motor and run it with the head pointing down until no lubricant is observed coming from the head of the handpiece.

### Straight Handpiece

The straight handpiece does NOT require any lubrication, it employs permanently lubricated bearings.

## Motor Maintenance

### Cleaning

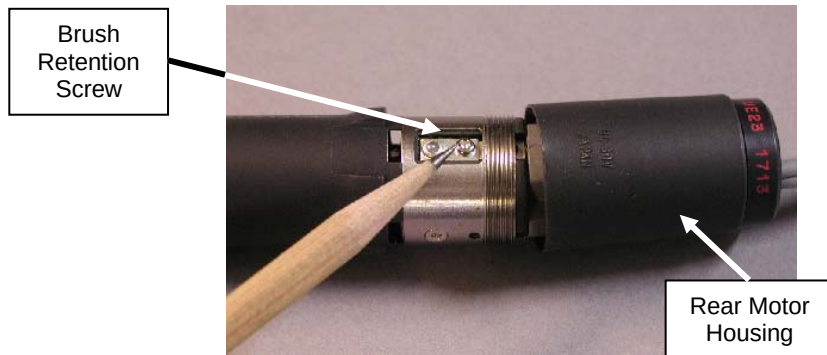
Clean the motor with a standard cleaning solution and soft cloth.

DO NOT use water.

## Changing the Brushes

The motor has been specifically designed for easy maintenance. The brushes can be changed following the procedures below:

- Unscrew the rear motor housing, See figure below
- Using the small screw driver supplied with the unit unscrew the brush retention screw from each of the 2 brushes
- Remove the brushes
- Insert the new brushes into the brush holders
- Replace the brush retention screws



## Battery Pack Maintenance

The battery pack is a sealed unit, there are no user serviceable parts inside. The only maintenance that is required is to keep it clean and protect the connectors from contamination and damage.

## Storage

The motor, handpieces, and battery pack can be stored between 36 and 120°F. Avoid temperature extremes.

**CAUTION:** Freezing may damage the battery pack and yield it unusable.

## Trouble Shooting Guide

| Symptom                                         | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Motor will not turn when turned "ON"            | <ol style="list-style-type: none"><li>1. Check connection of motor to Battery Pack</li><li>2. If using the foot switch, check the connection to the battery pack. If this does not solve the problem disconnect the foot switch.</li><li>2. Switch to the back-up battery pack and try again.</li><li>3. The battery packs may not be properly charged, charge over night and try again.</li><li>4. Check motor brushes and replace if necessary</li></ol> |
| Motor turns, but will not attain full speed.    | <ol style="list-style-type: none"><li>1. Check connection of motor to battery pack</li><li>2. Switch to the back-up battery pack and try again.</li><li>3. The battery packs may not be properly charged, charge over night and try again.</li><li>4. Check motor brushes and replace if necessary</li></ol>                                                                                                                                               |
| The motor turns properly, but the bur does not. | <ol style="list-style-type: none"><li>1. Check the attachment of the hand piece to the motor.</li><li>2. Check for dirt and debris in the chuck mechanism</li></ol>                                                                                                                                                                                                                                                                                        |
| Motor runs rough, noisy                         | <ol style="list-style-type: none"><li>1. Check the bearings, they may be worn and/or dirty.</li><li>2. Check the motor armature, it may be contaminated and/or worn.</li></ol>                                                                                                                                                                                                                                                                             |

|                                                                 |                                                                                                                                                                                                         |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bur stops when pressure is applied, but motor continues to run. | 1. Check the collet in the hand piece, it may be worn.<br>2. Check the bur shaft, it may be worn or the wrong diameter<br>3. Check the slots in collet, they may be dirty and won't grip the bur shaft. |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### **Specifications and Parts List**

#### Specifications

| <b>Item</b>                                   | <b>Specification</b>                                            |
|-----------------------------------------------|-----------------------------------------------------------------|
| Power Source                                  | Sealed Ni-MH Battery                                            |
| Output Voltage                                | 30 VDC                                                          |
| Rated Current                                 | 2 Amps                                                          |
| Motor Speed                                   | 1500-35,000                                                     |
| Operating Duration With Fully Charged Battery | 8 hours, depending on motor load                                |
| Battery Recharge Life                         | 1000 times                                                      |
| Battery Charging Time                         | Wall Charger: ~2 hours approx.<br>Solar Panel: ~6 hours approx. |
| Charger Power Source                          | 100 VAC - 240 VAC, 50 or 60 Hz.                                 |

#### Parts List

| <b>PART NUMBER</b> | <b>DESCRIPTION</b>                               |
|--------------------|--------------------------------------------------|
| 5100000            | TravelBELL™ Advanced system                      |
| 5100005            | BatteryBELL™ 30XL2 battery pack                  |
| 9400001            | Foot Switch (ON/OFF)                             |
| 9400091            | PowerBELL™ III wall charger(100-240VAC 50/60 HZ) |
| 9400004            | Motor, E-type, 35,000 RPM                        |
| 9400068            | Hand Piece, 1:1 Contra Angle, Latch              |
| 9400018            | Hand Piece, Straight                             |
| 9400024            | CarryingBELL™ II                                 |
| 9400014            | Handpiece, 1:5 Contra Angle                      |
| 6000001            | SolarBELL™ 30XL (optional)                       |

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|                        |                                                                   |
|------------------------|-------------------------------------------------------------------|
| 9100365 and<br>9400095 | BioLube Advanced Dental Handpiece E-Formula Lubricant with nozzle |
|------------------------|-------------------------------------------------------------------|

### **Application**

This product is intended for professional use only.

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